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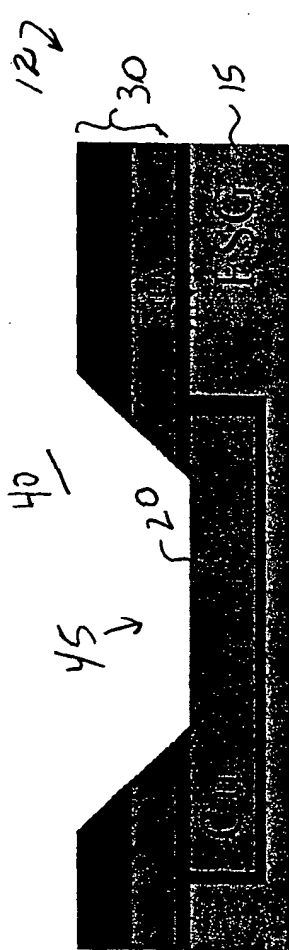
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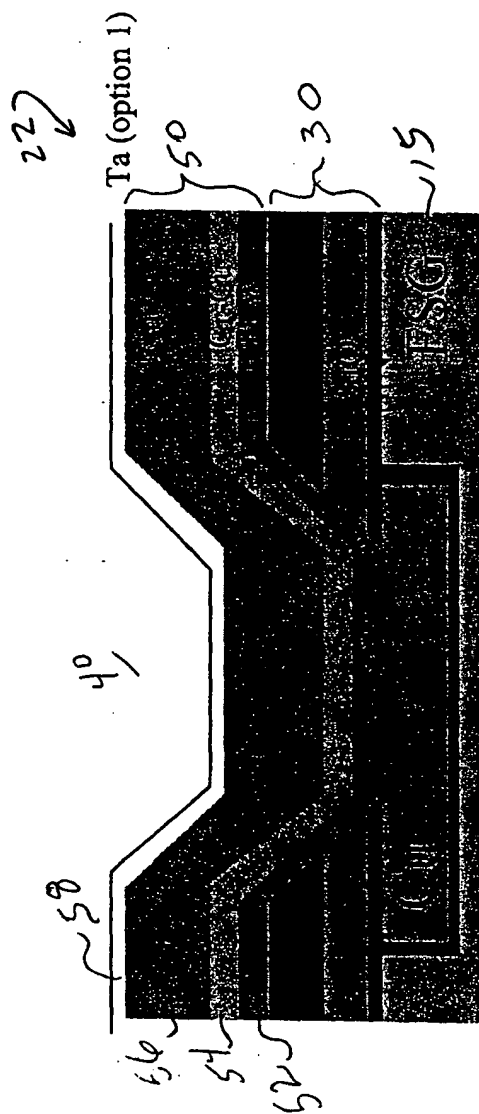
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Fig. 1.



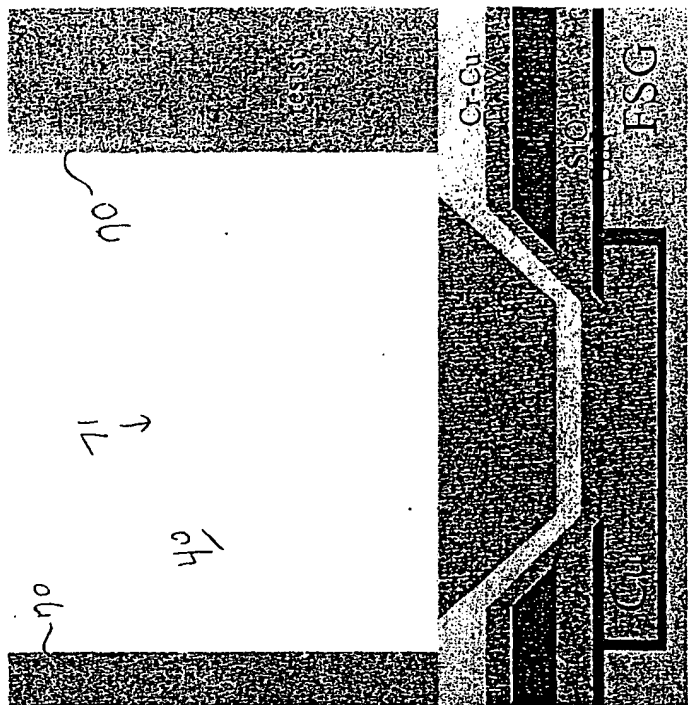
(a) Last metal Cu, deposit passivation, pattern terminal via patterning



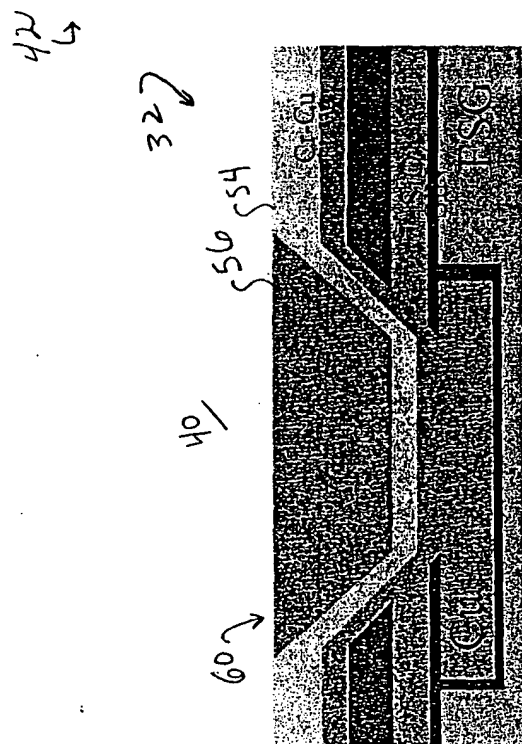
(b) Deposit barrier layer metals (TiW, CrCu, Cu) and polish stop (Ta, optional)

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(d) Pattern resist for C4 solder balls

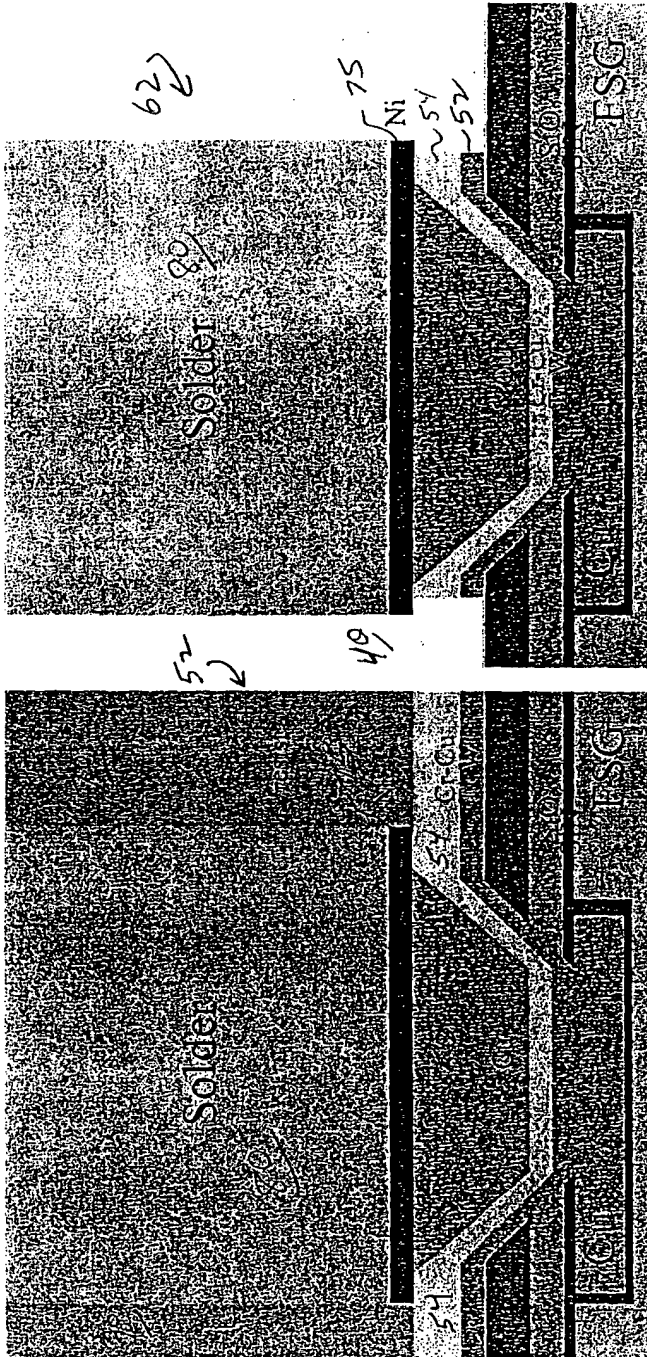


(c) Polish Cu, stop on Cr-Cu

Fig 1

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(e) Deposit Ni, deposit solder by plating

(f) Wet etch Cr-Cu and Ti-W

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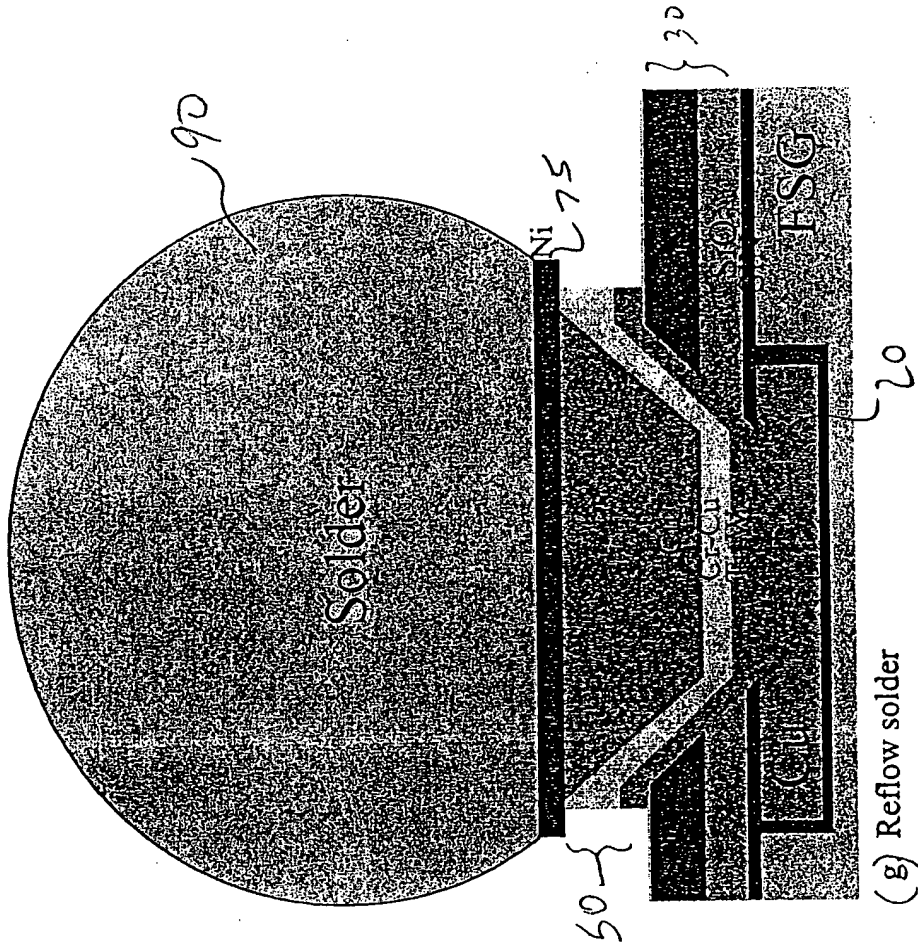


Fig 1

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Option 2; Multiple small vias

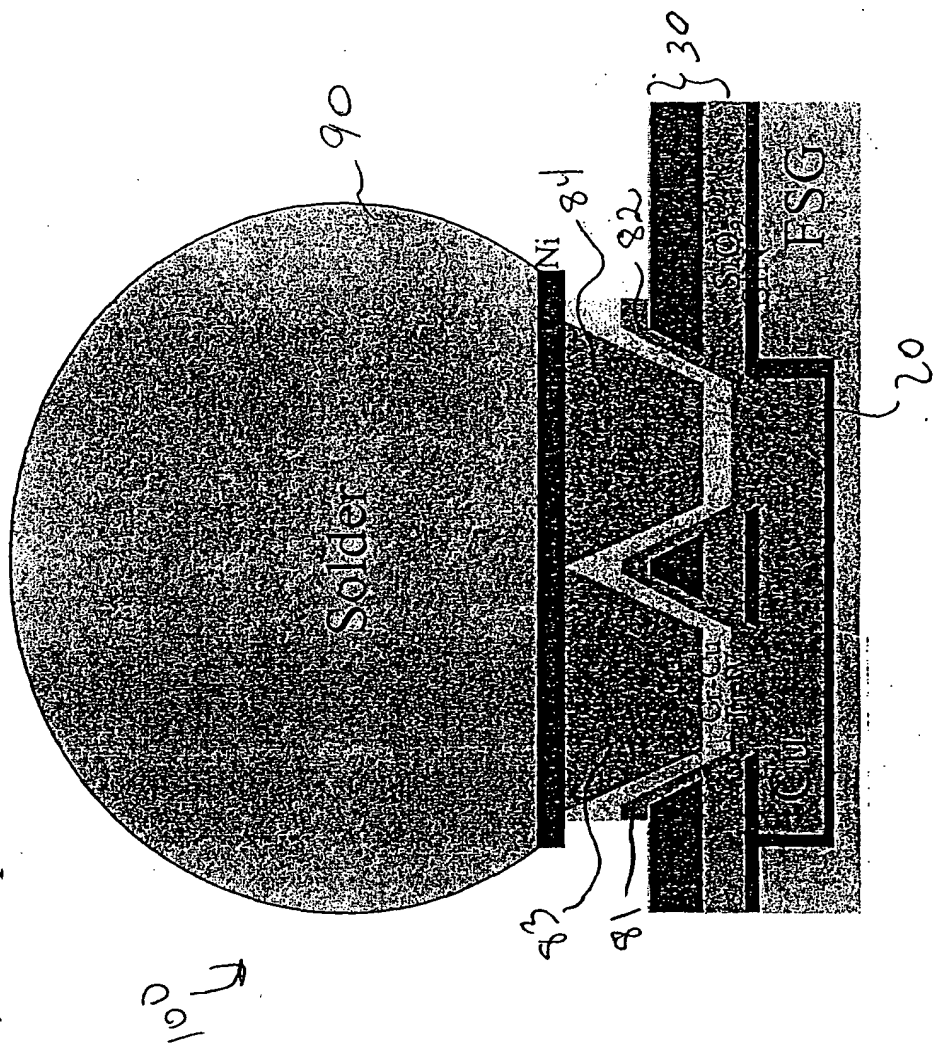
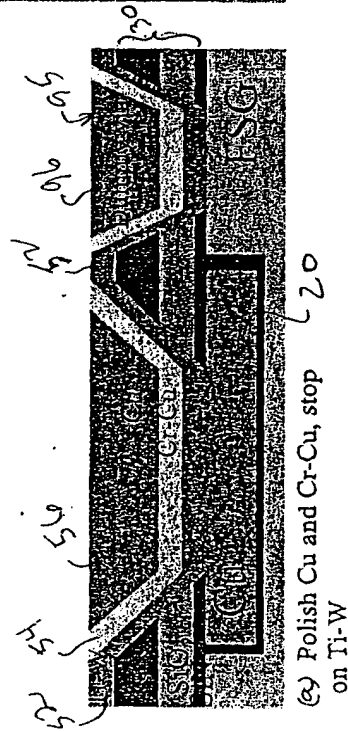


Fig 2

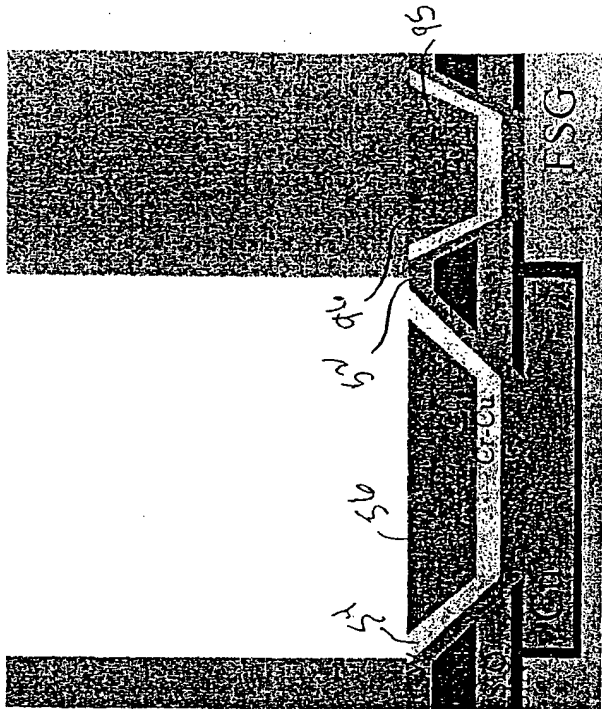
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Option 3: polish Cu and Cr-Cu
(with dummy vias to provide
low resistance seed layer for
electroplating)

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(a) Polish Cu and Cr-Cu, stop
on Ti-W

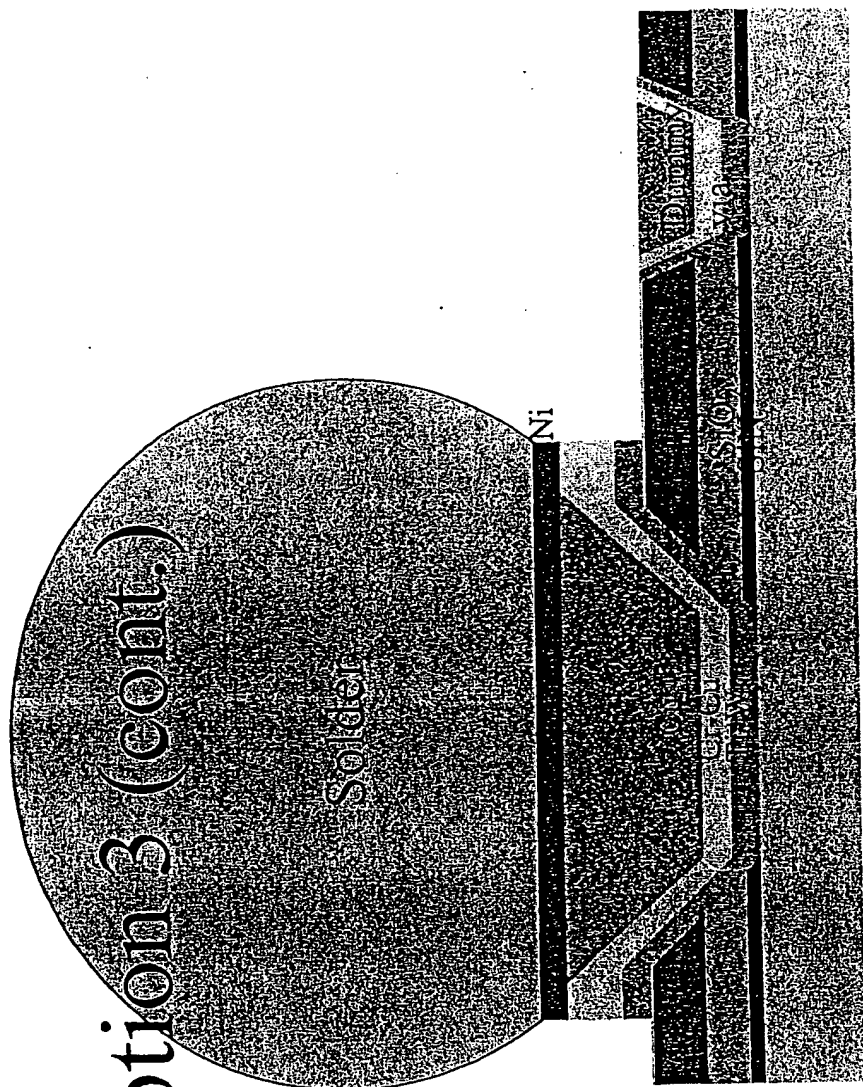


(b) Pattern resist for C4 solder balls

Fig. 3

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(c) Reflow solder

Fig. 3